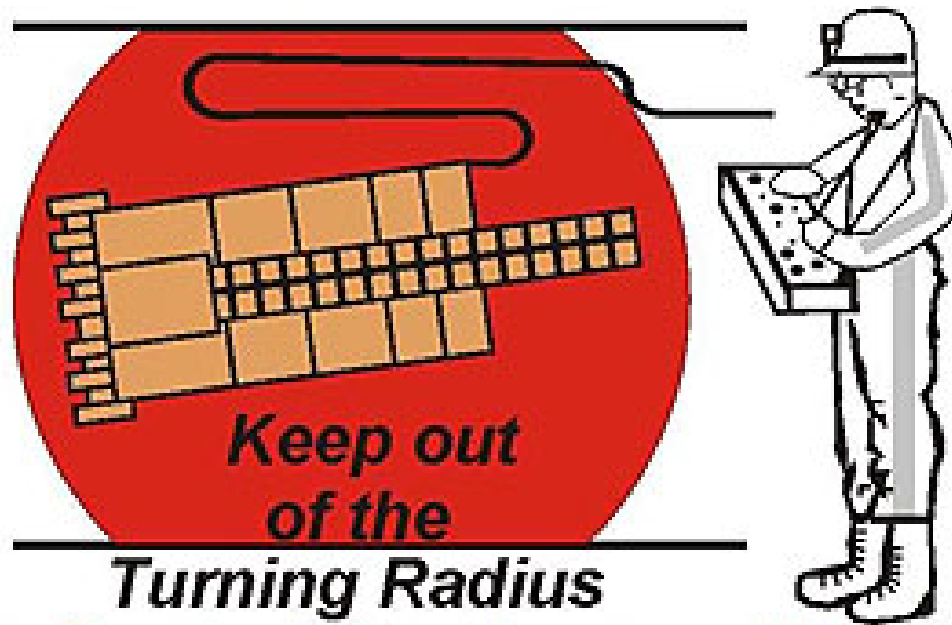


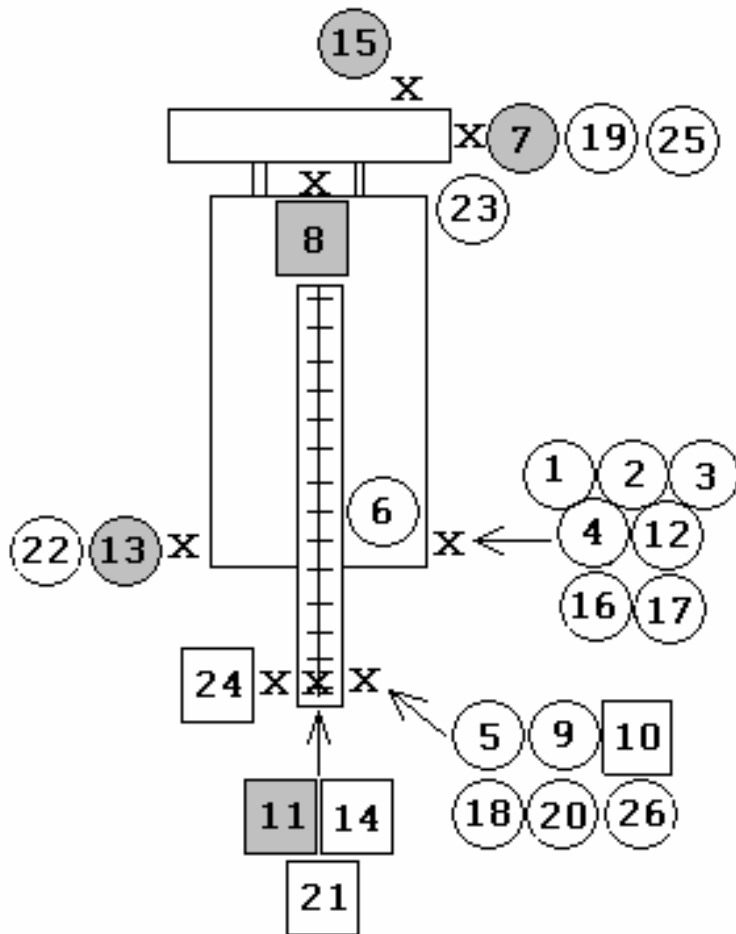
Remote Control/ Hazard Awareness



Remote Control Continuous Miners

U. S. Department of Labor - MSHA

Victim Location With Respect to the Machine



- 26 fatalities since 1988
- 12 fatalities since 2000 (46%)
- 3 fatalities in 2004

Legend

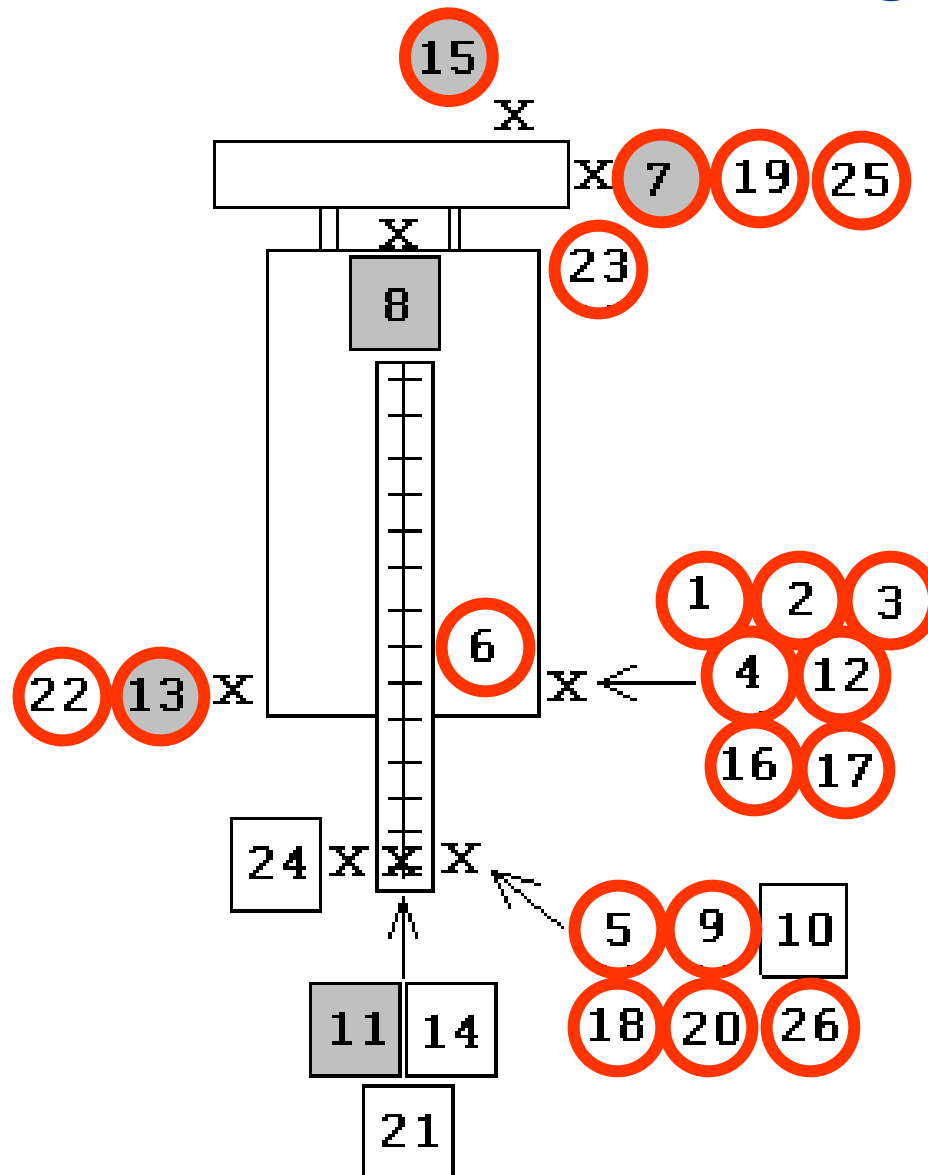
X Victim location

○ Operating the remote

□ Not operating the remote

● Maintenance activity

Victims Operating the Remote



Of the 26 fatalities,
77% were operating
the remote

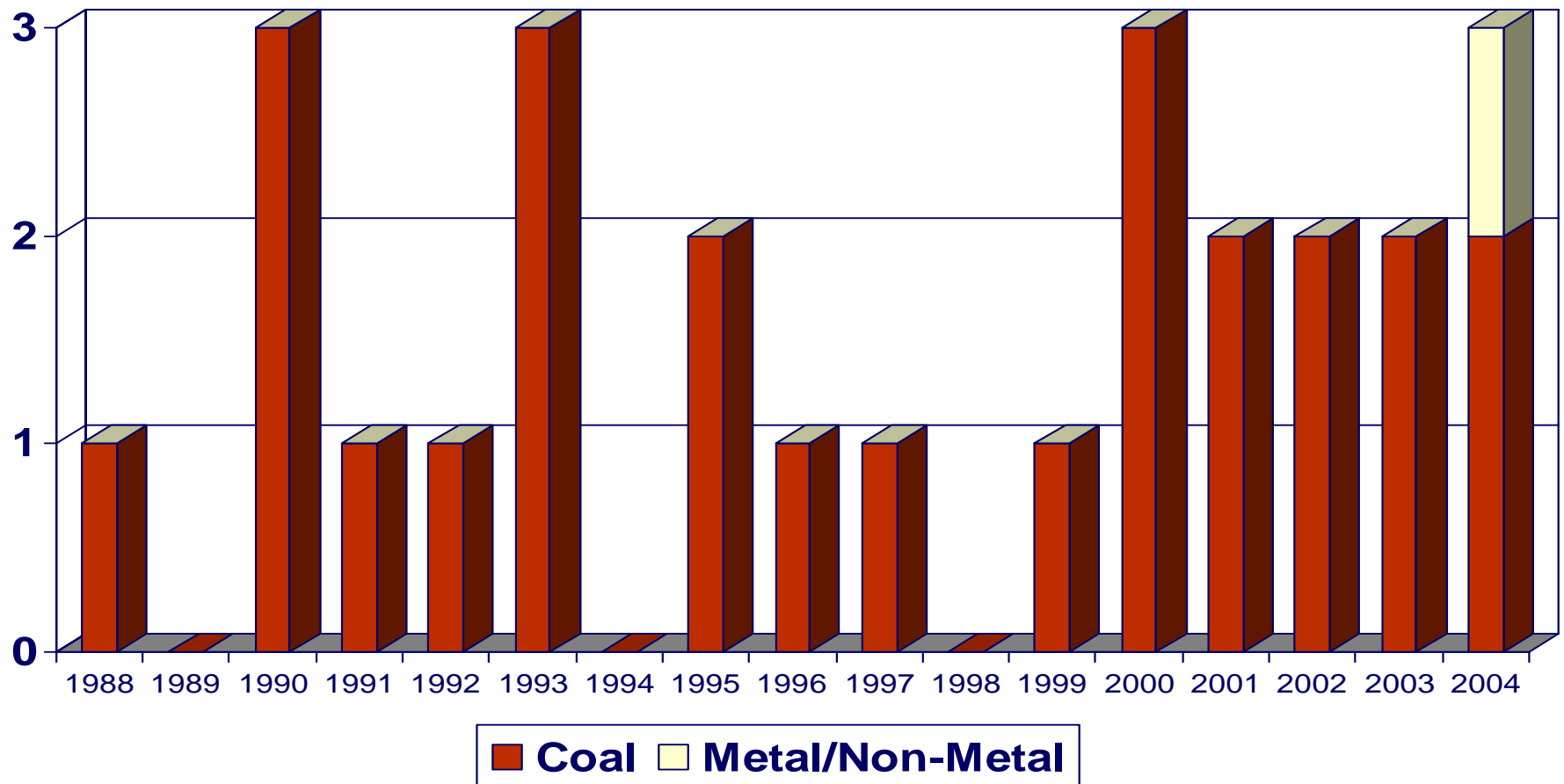
Equipment Involved in the Fatality

Miner Make	Miner Model	Qty	Total
Eimco	2810	1	2
	2460	1	
Jeffrey	1028HP	1	3
	101MC	1	
	1036	1	
Joy	12CM	9	18
	14CM	8	
	12HM	1	
Simmons-Rand	500	2	3
	525	1	

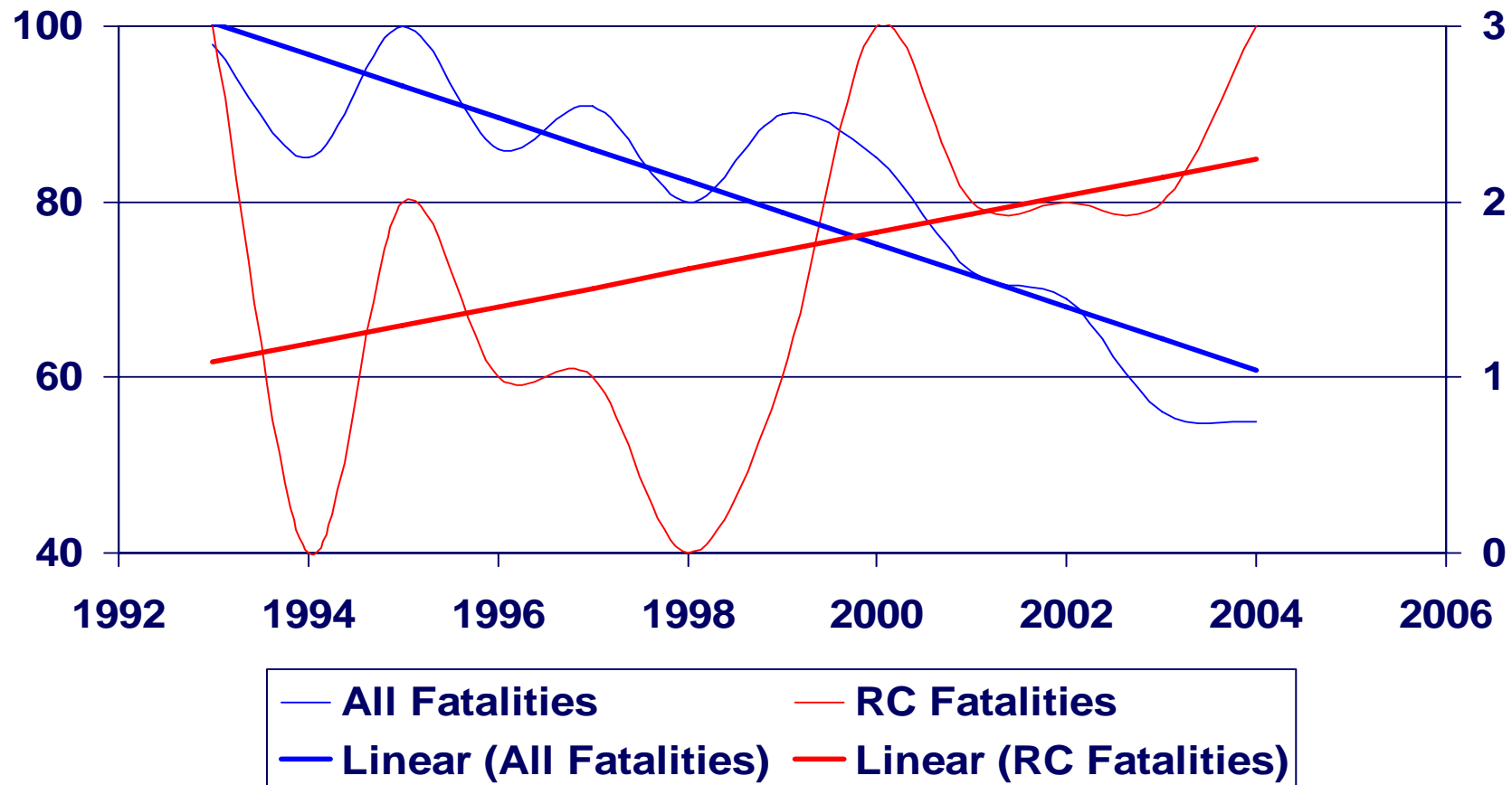
Equipment Involved in the Fatality

Remote Make	Remote Model	Qty	Total
Matric	Plastic Station	7	13
	TX2	1	
	TX3	5	
Moog	129	3	3
Not Reported	Radio	8	10
	Umbilical	2	

Remote Control CM Fatal Accident History



Remote Control Fatalities vs. All Fatalities

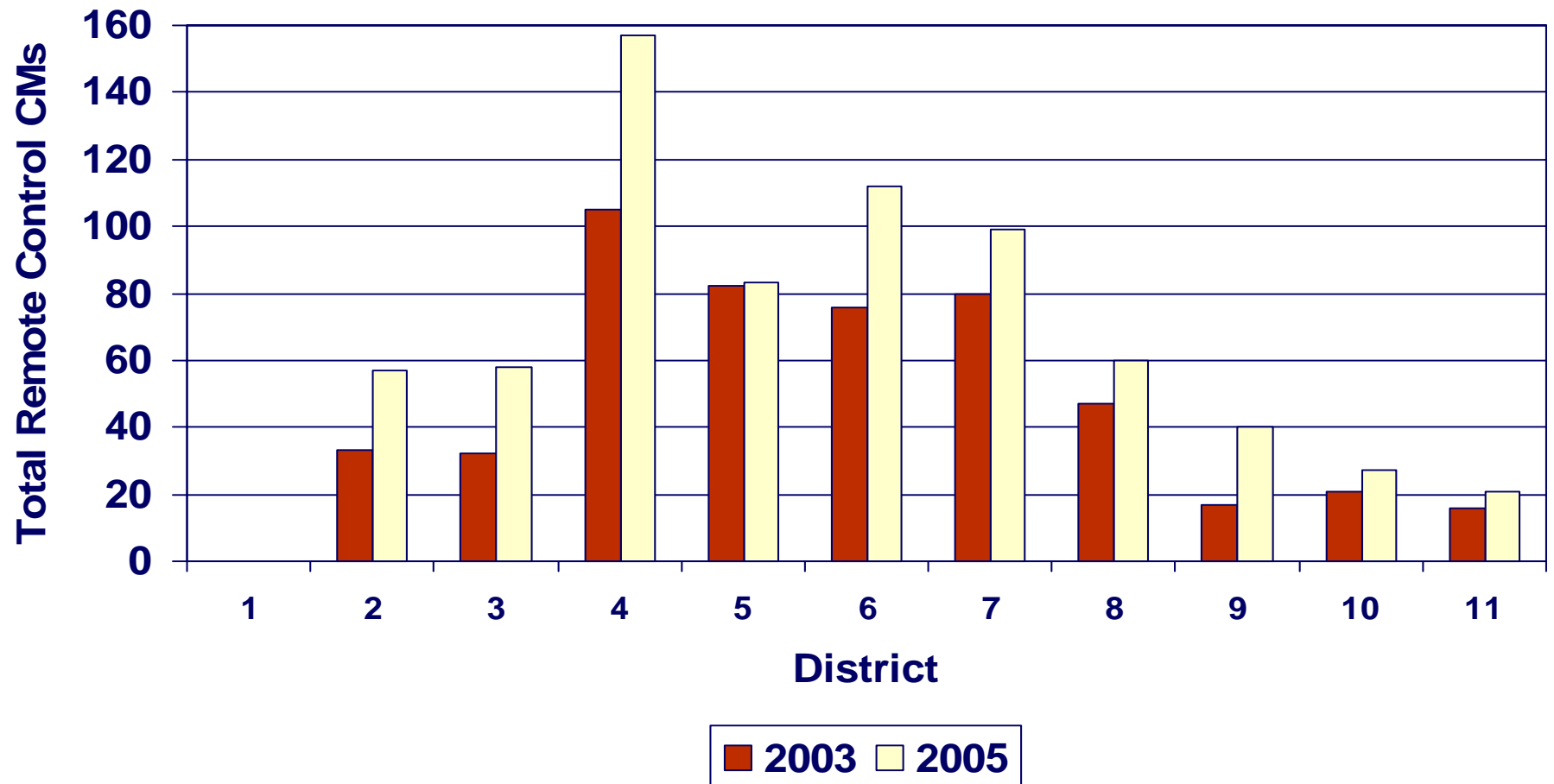


**The trend line for RC fatalities is upward which is
contrary to the overall fatality trend**

Remote Miner Population

	Continuous Miner MMUs					
	Without Remote Control		With Remote Control		Total	
District	2002	2005	2002	2005	2002	2005
1	2	2	0	0	2	2
2	4	1	33	57	37	58
3	10	2	32	58	42	60
4	13	22	105	157	118	179
5	13	2	82	83	95	85
6	8	6	76	112	84	118
7	3	3	80	99	83	102
8	0	0	47	60	47	60
9	0	0	17	40	17	40
10	0	4	21	27	21	31
11	0	0	16	21	16	21
Total	53 9.4%	42 6%	509 90.6%	714 94%	562 100%	756 100%

Remote Miner Population

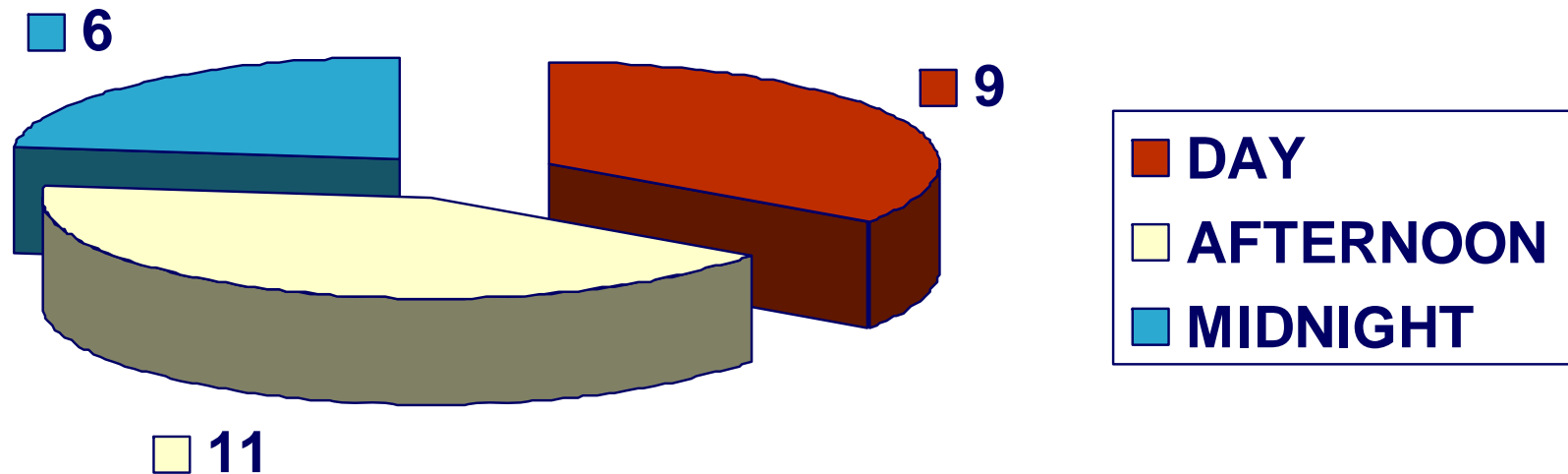


Since 2003 there is an increase of 40%

Remote Control CM Facts

- The use of remote control continuous miners is expected to rise in the future
- **77%** of the victims were operating the remote at the time of the fatality
- Remote fatalities are on an upward trend
- We must work together to reverse this trend

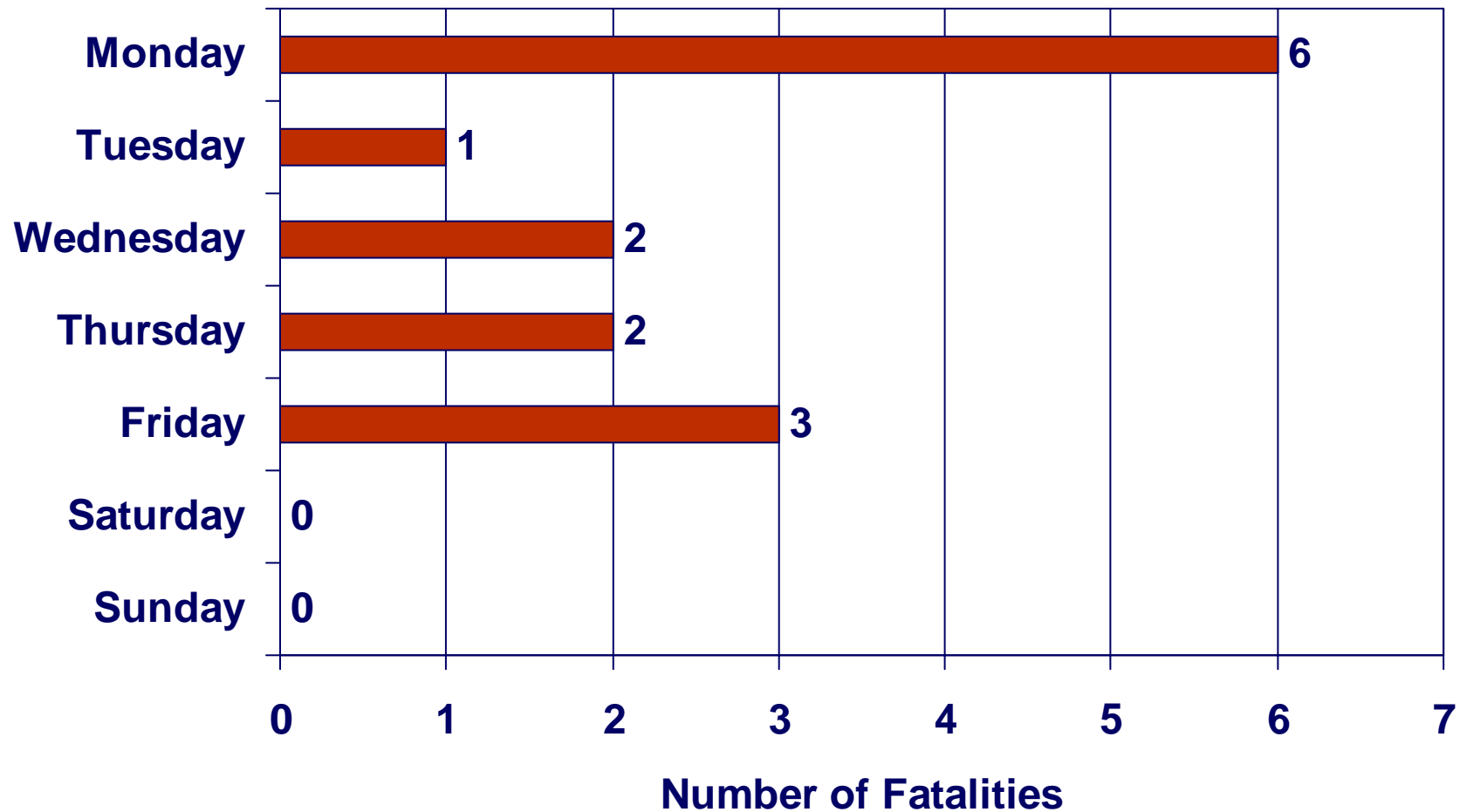
Fatalities by Shift



65% occurred during an off-shift,
contrary to a majority of workers on the Day Shift.

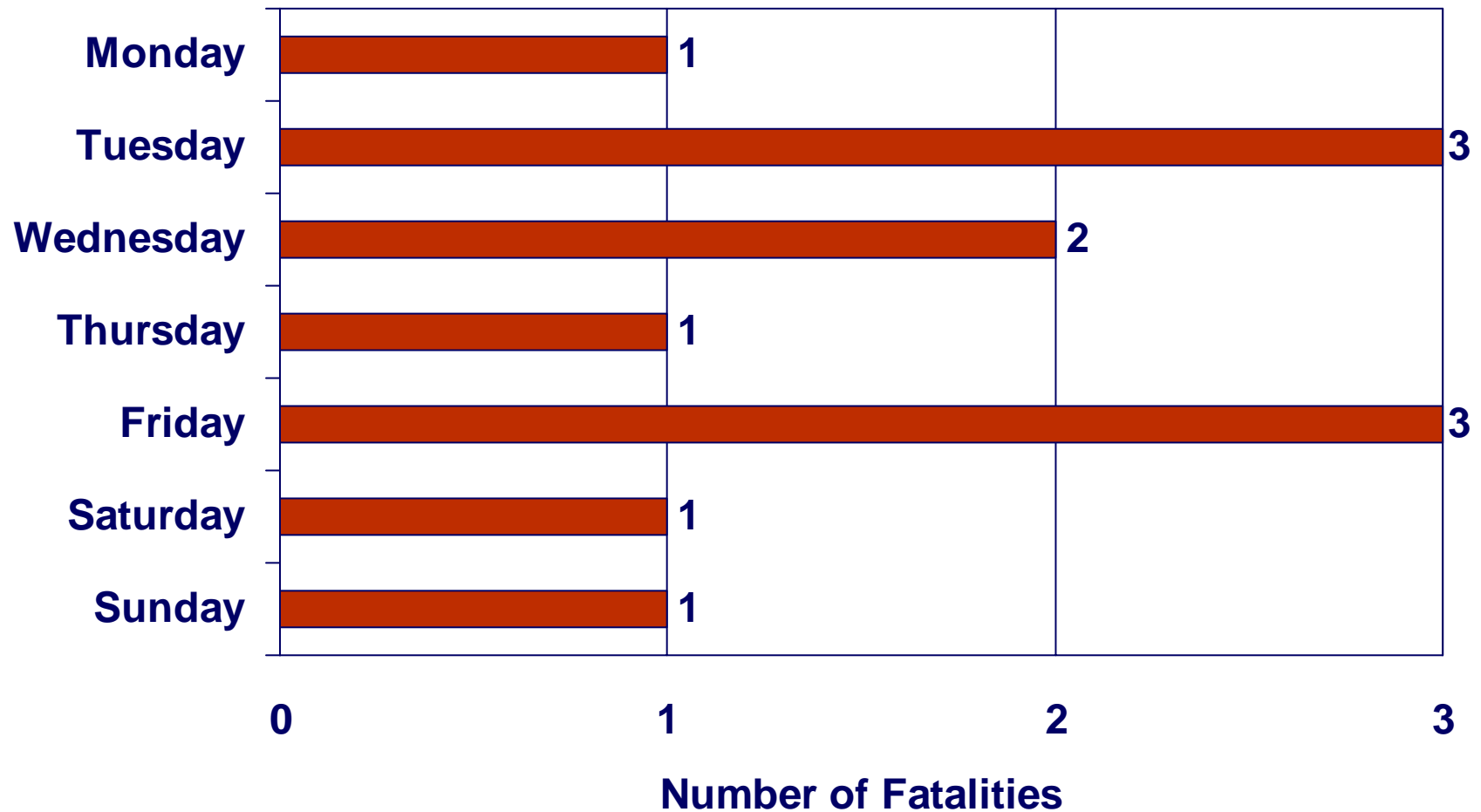
Fatalities by Day of the Week

1988-1999

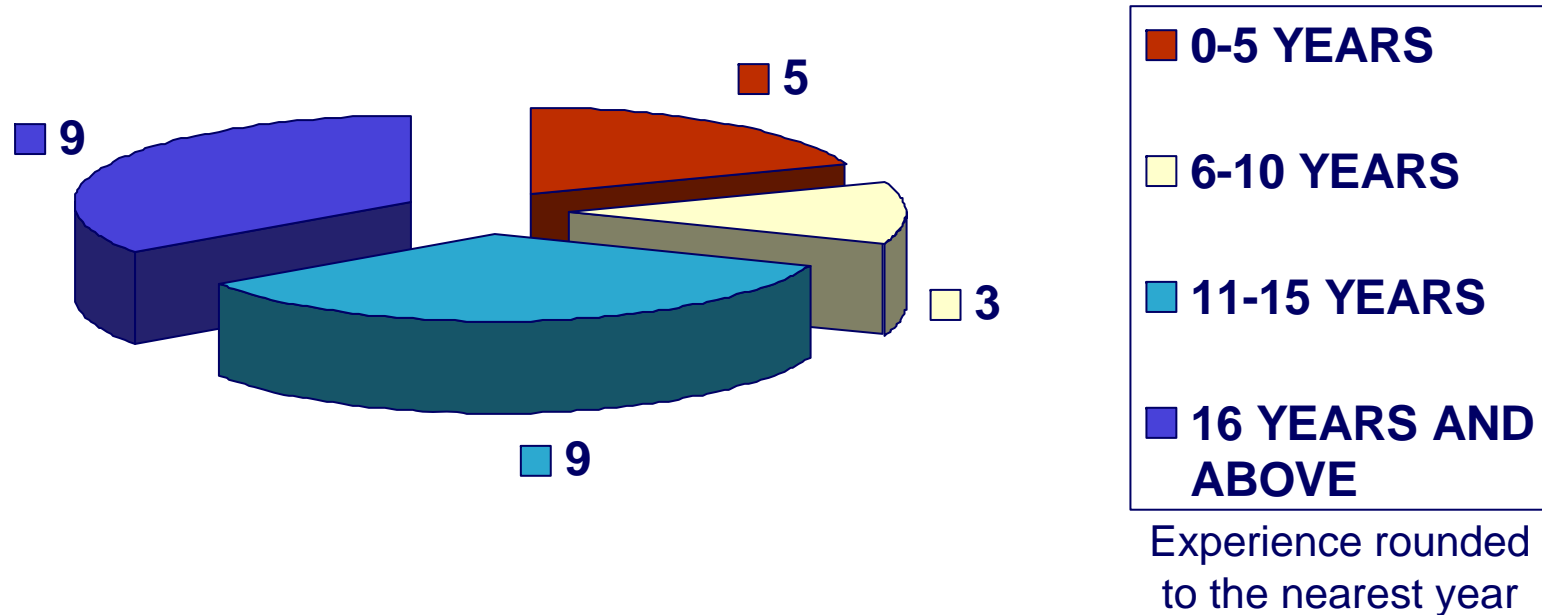


Fatalities by Day of the Week

2000-2004

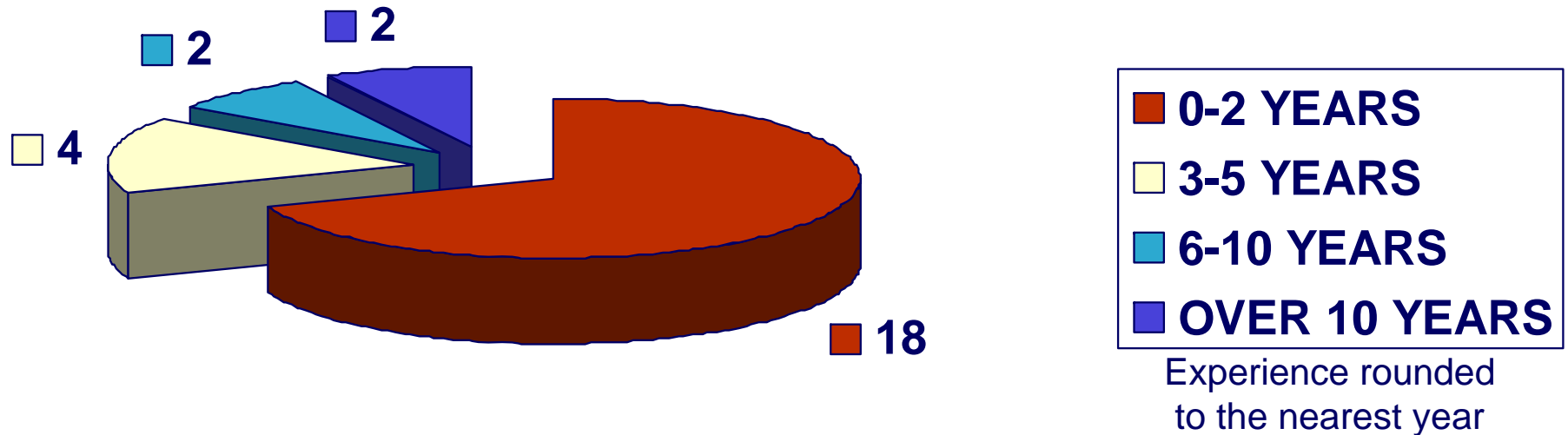


Fatalities by Total Mining Experience



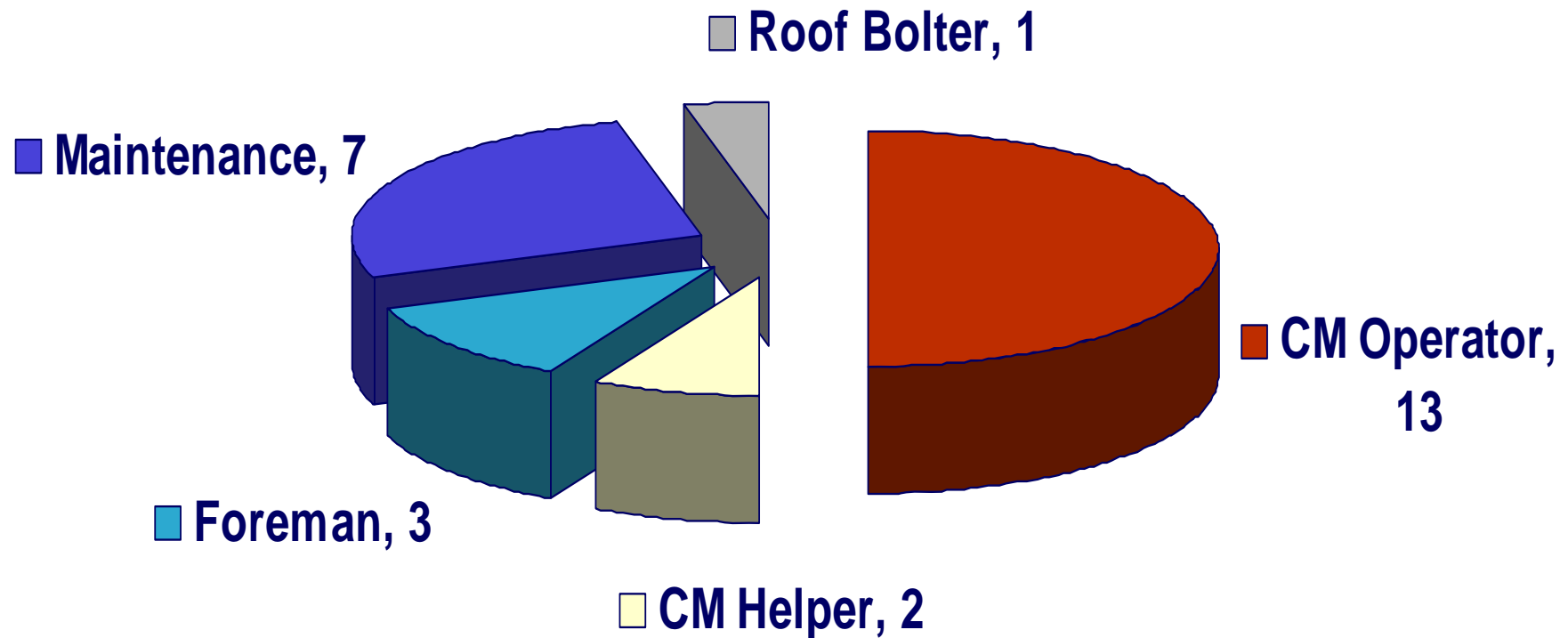
- Fatalities are happening to experienced miners
- **69%** of the victims had greater than 10 years of mining experience

Fatalities by Experience at the Mine where the Fatality Occurred



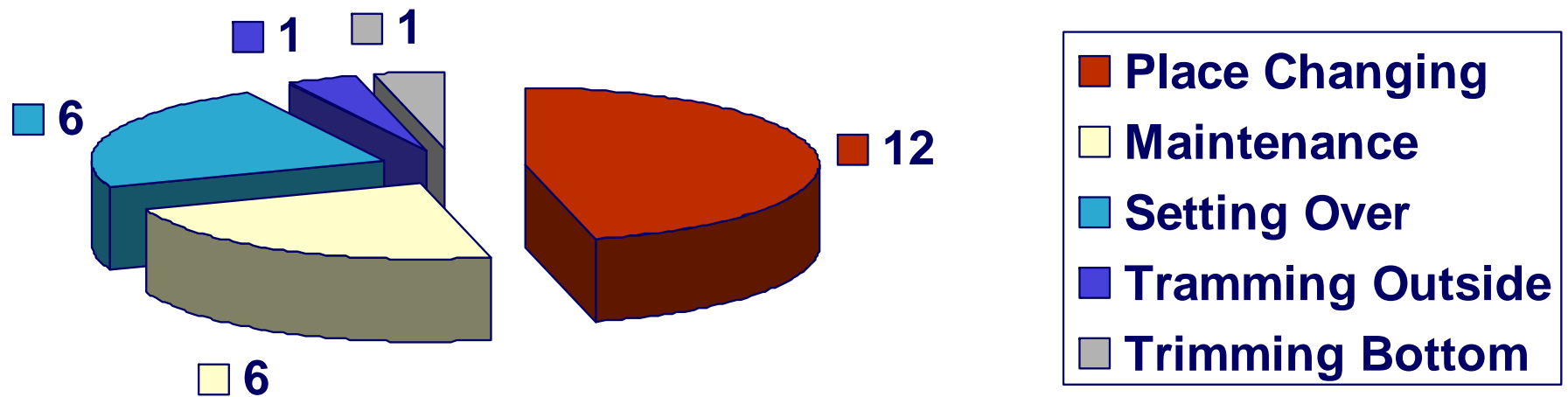
69% of the victims had less than 2 years
experience at the Mine

Fatalities by Job Classification



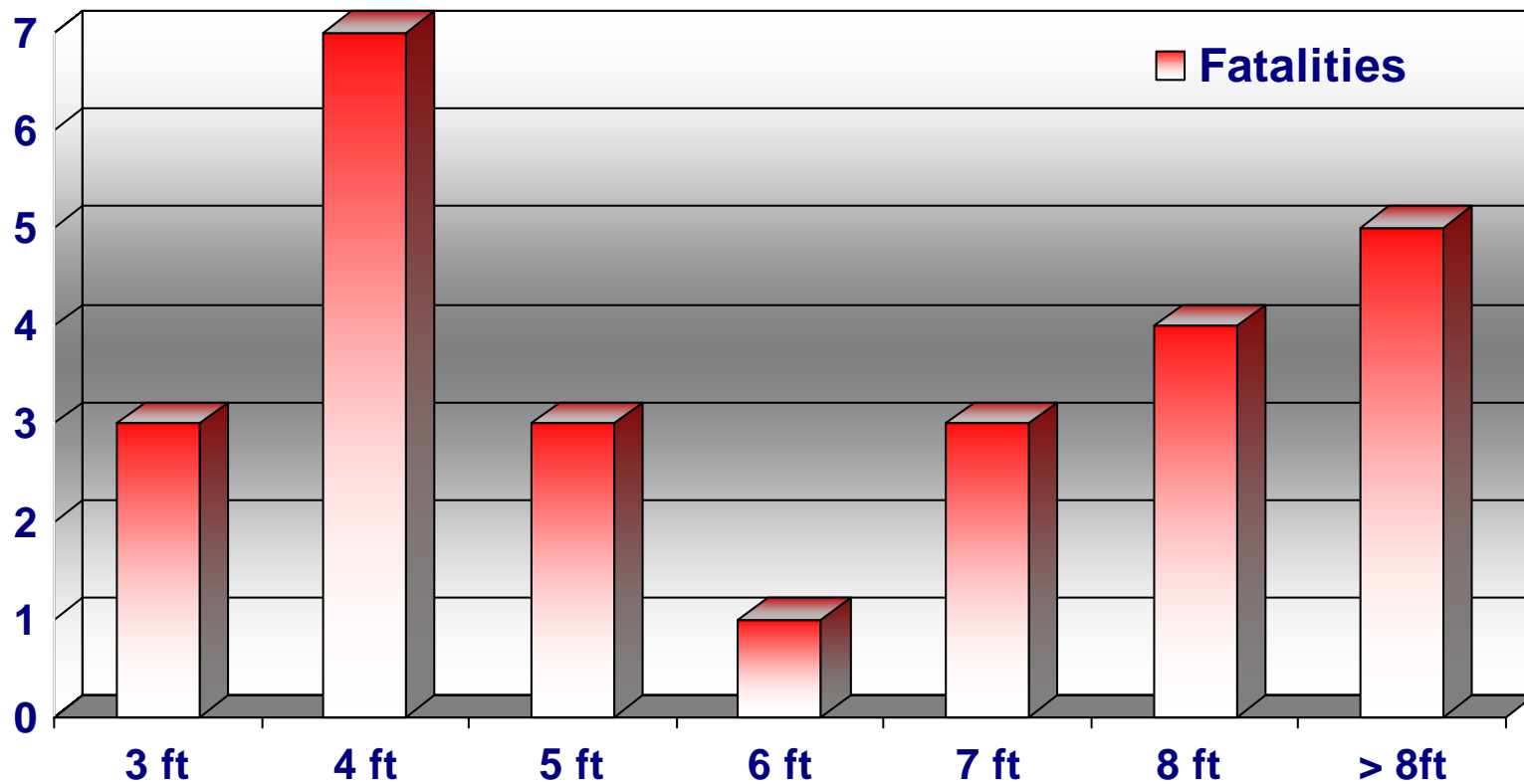
- **77%** of victims were Miner Operators or Maintenance
- Foremen should lead by example: Stay out of the **“Red Zone”** and do not become a fatality statistic.

Fatalities per Activity



**Fatalities are occurring during the regular mining cycle.
These activities must be managed with good safety practices.**

Fatalities per Mining Seam Height



Fatalities are occurring regardless of the seam or bed height

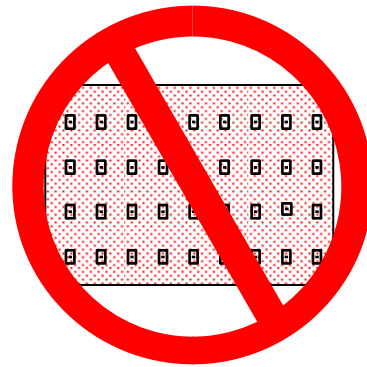
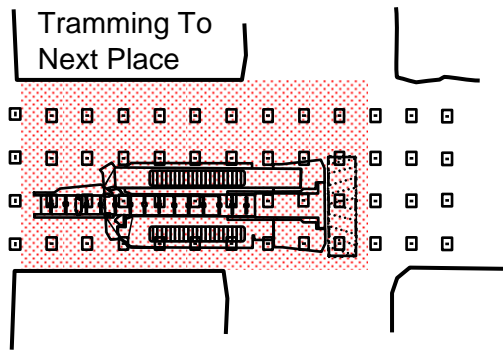
Remote Control Best Practices

- Establish safe operating procedures for remote control continuous mining machine operations, which include
 - Trimming
 - Cable handling
 - Maintenance
 - Setting over
- These procedures must be practical and useful
 - Consult with the equipment operator when establishing the procedures
 - All miners, regardless of experience or job classification, must be trained in these procedures
 - All miners must enforce these procedures

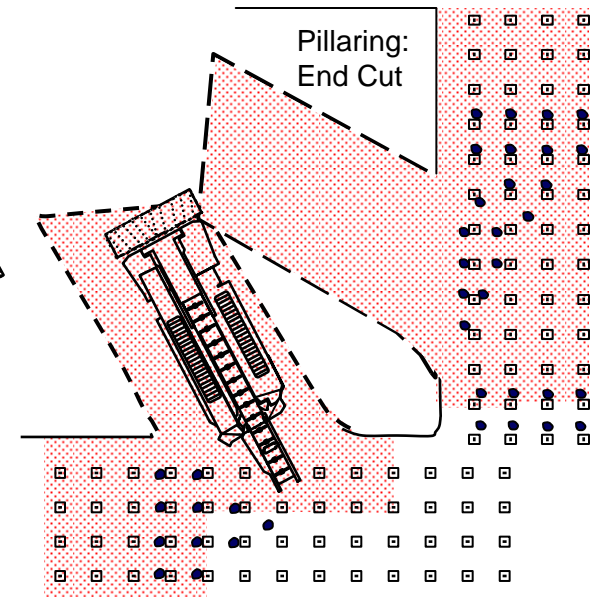
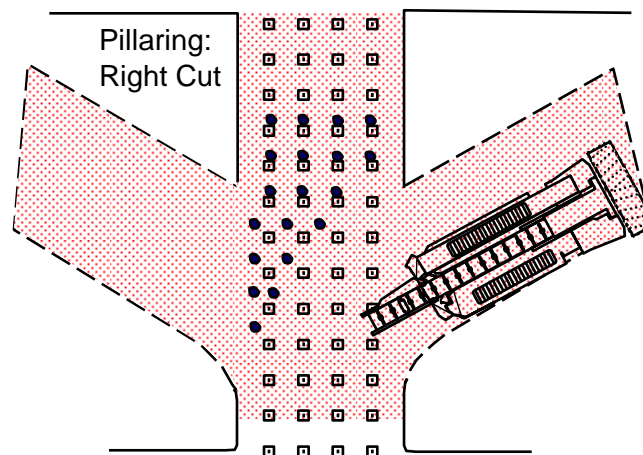
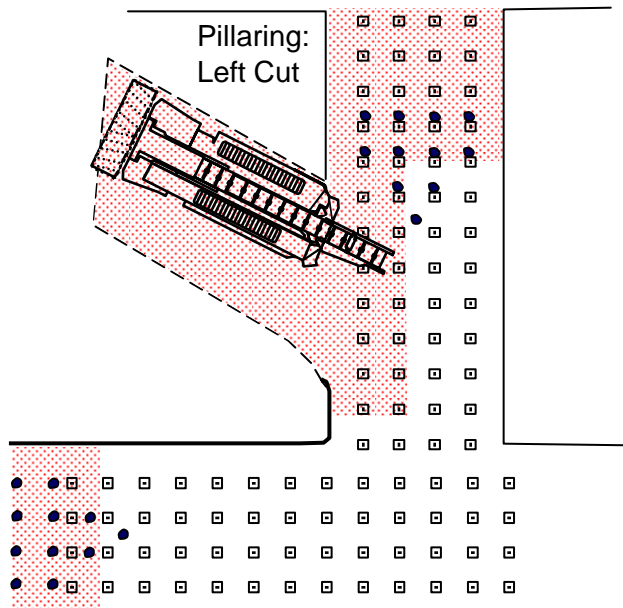
RED ZONES ARE NO ZONES

FOR

MINING WITH REMOTE CONTROL CONTINUOUS MINERS



NOTE:
THESE DRAWINGS DO NOT SUPERCEDE
ANY STATE OR FEDERAL REQUIREMENT



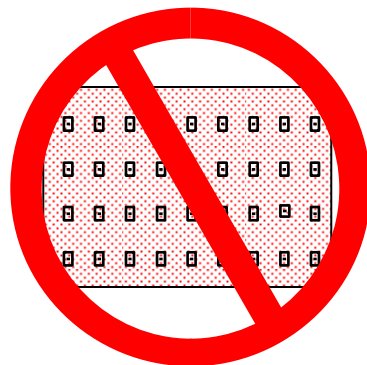
Developed through a cooperative effort between MSHA's District 5 Office, the Virginia DMME, and local mining companies

<http://www.msha.gov/Alerts/20040407REDZONE2.pdf>

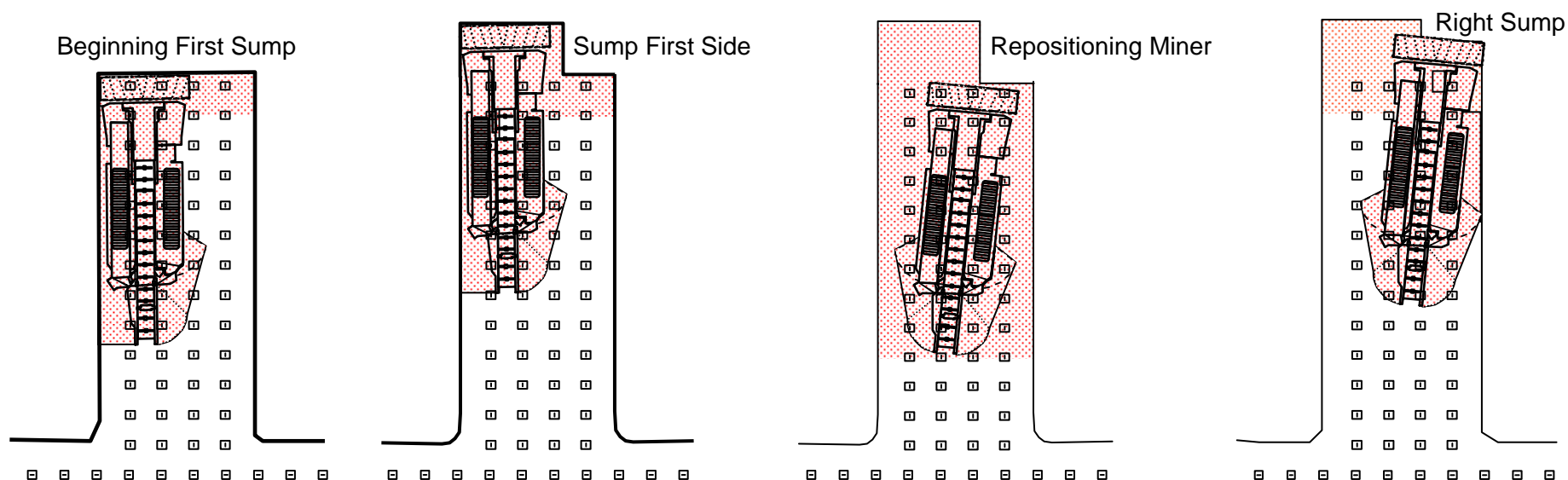
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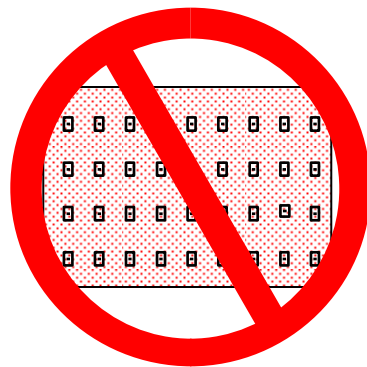
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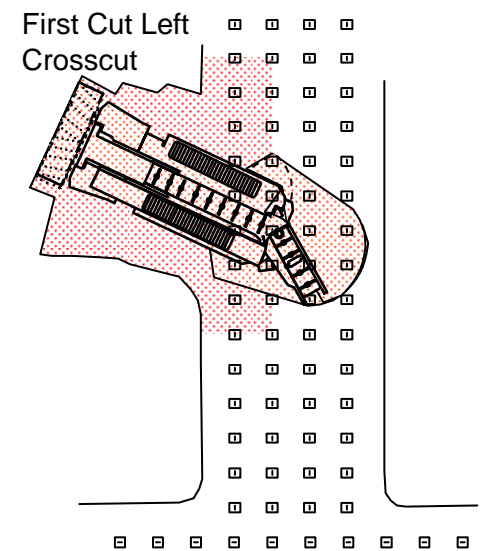
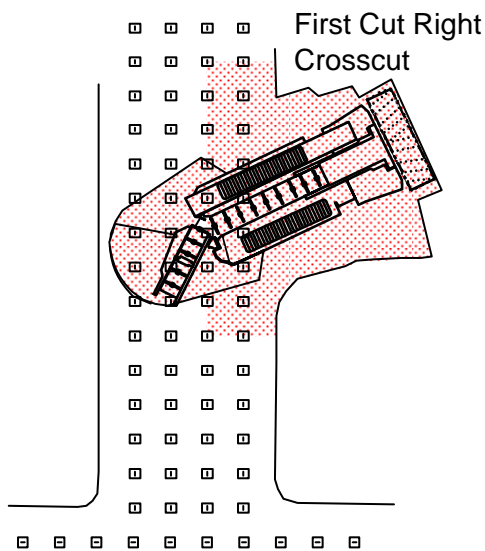
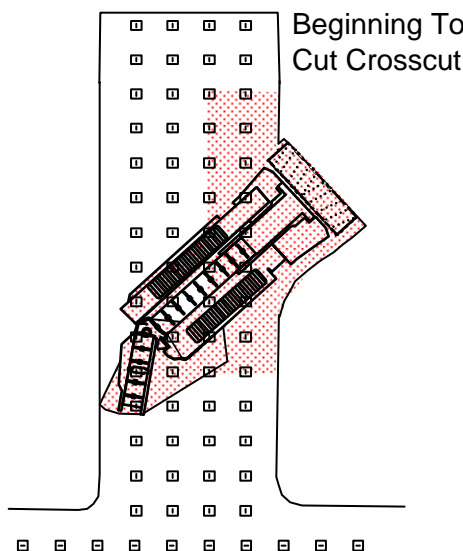
RED ZONES ARE NO ZONES

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MINING WITH REMOTE CONTROL CONTINUOUS MINERS



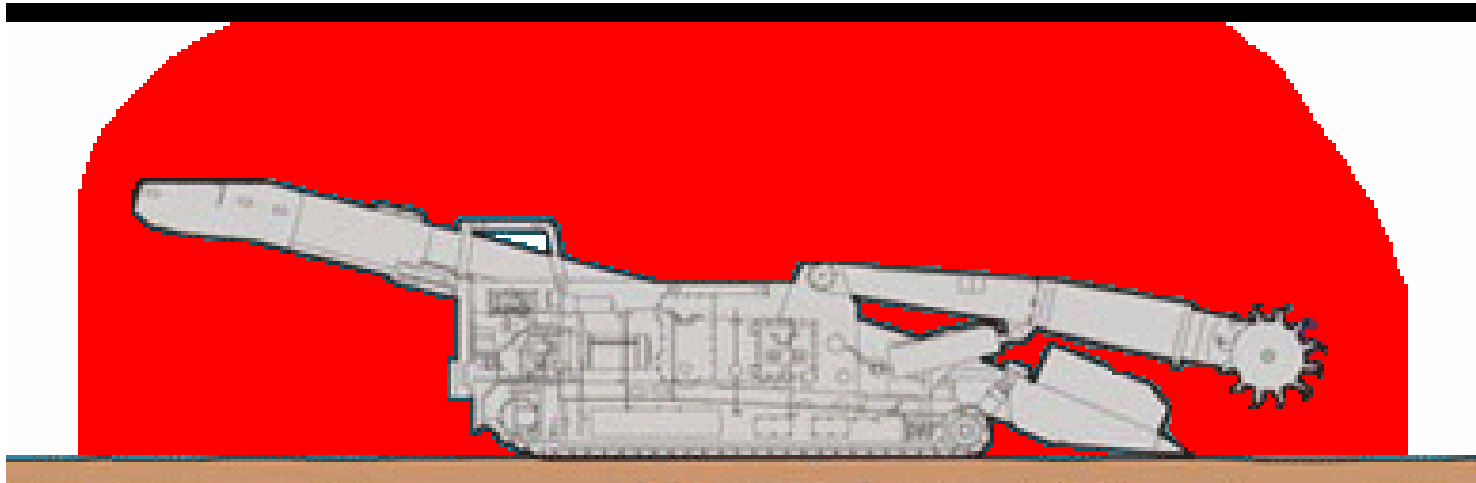
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Developed through a cooperative effort between MSHA's District 5 Office, the Virginia DMME, and local mining companies

<http://www.msha.gov/Alerts/20040407REDZONE2.pdf>

RED ZONES ARE NO ZONES



Remember that the **"Red Zone"** extends above the Machine.

DO NOT get crushed between the machine and the roof.

KEEP OUT of this **Red Zone!**

Remote Control Task Training

**Adequate task training should be performed
to assure safe operation of equipment**



**MSHA is working with companies to develop
Job Task Analysis related to the operation of
remote control continuous miners**

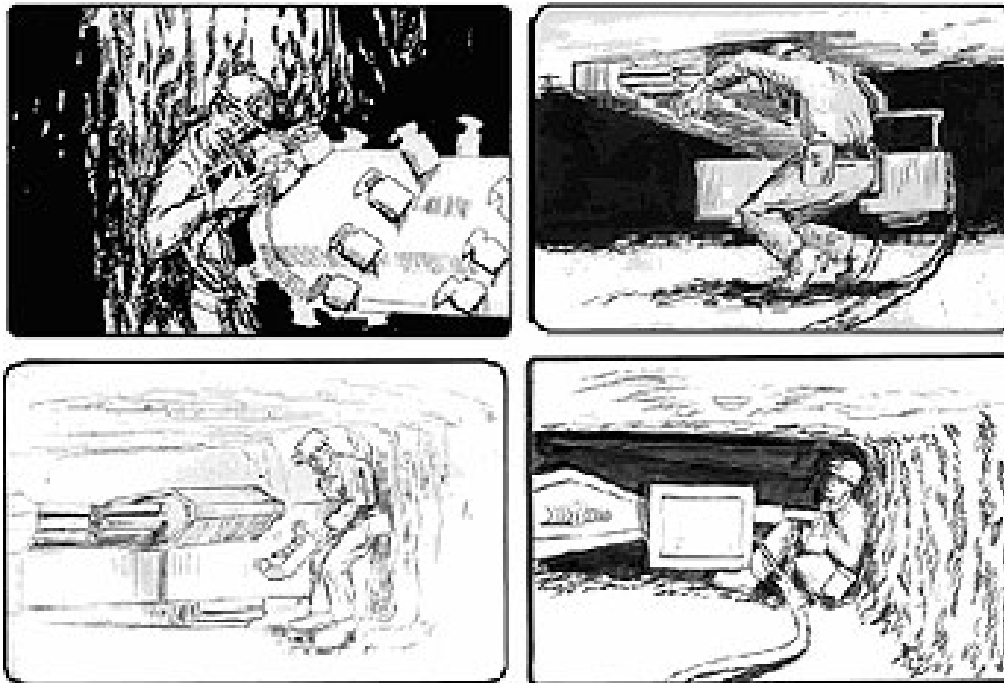
Training Improves Safety

Use this online tool to develop
adaptable training that will improve your mines'
production, safety, communication, and maintenance.

www.msha.gov/interactivetraining/tasktraining/index.html

Remote Control Best Practices

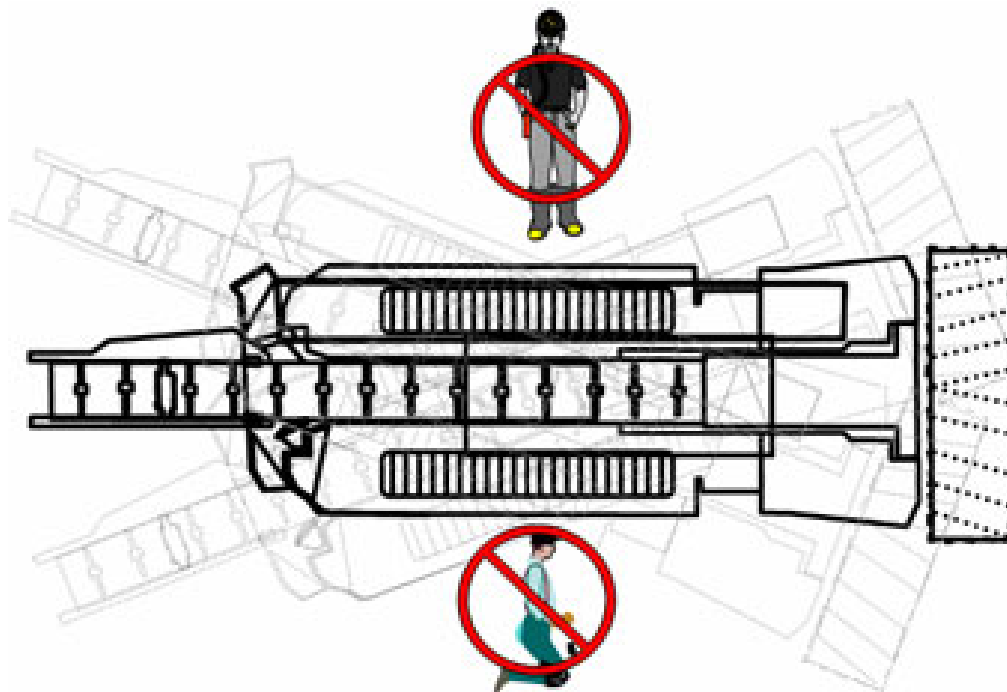
Tramming While Positioned Within The Turning Radius Of The Remote Control Continuous Miner Can Be Fatal



Tram the continuous mining machine from a safe location to avoid pinch points

Remote Control Best Practices

The Middle of the Remote Control Continuous Miner Is Not A Safe Place to Tram



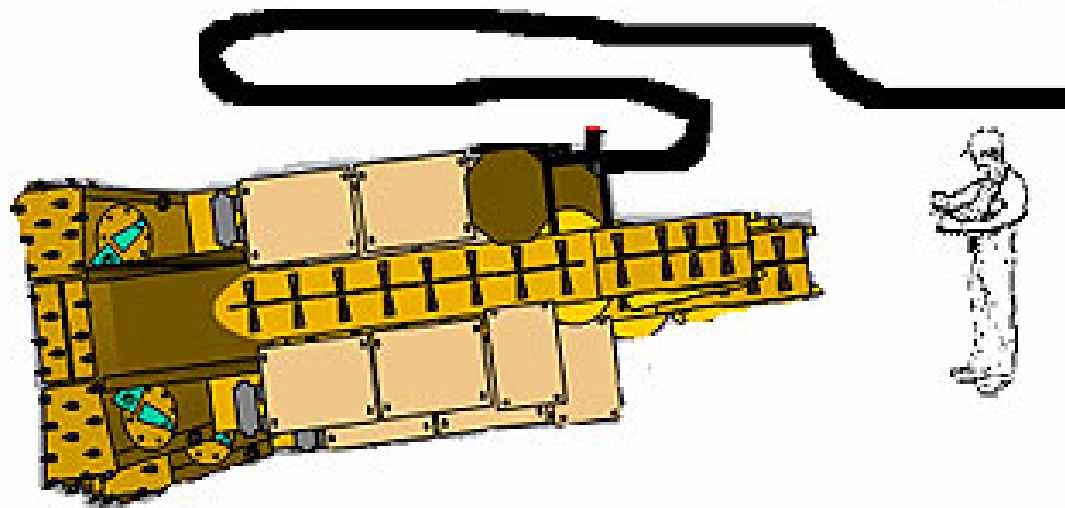
- The middle of the remote control continuous miner (pivot point) is not a safe place from which to reposition or tram the machine during a place change.
- The pivot point moves as the machine moves and may cause you to be in a position to be crushed if the miner suddenly turns.



MSHA challenges you to look closely at the operation of the remote control continuous miner the next time you are on the section

Remote Control Best Practices

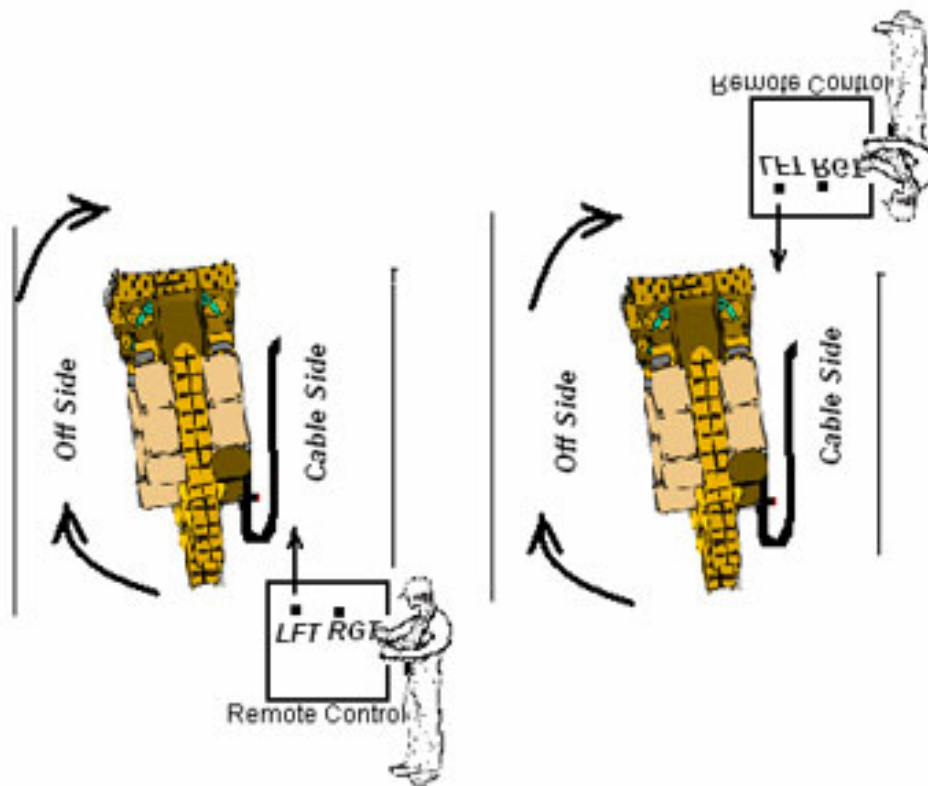
Tramming While Positioned Within The Turning Radius Of The Remote Control Continuous Miner Can Be Fatal



The pump motor should be de-energized, and all machine motion stopped, when the trailing cable or water line has to be repositioned in close proximity to the machine

Remote Control Best Practices

Turning a Remote Control Continuous Miner

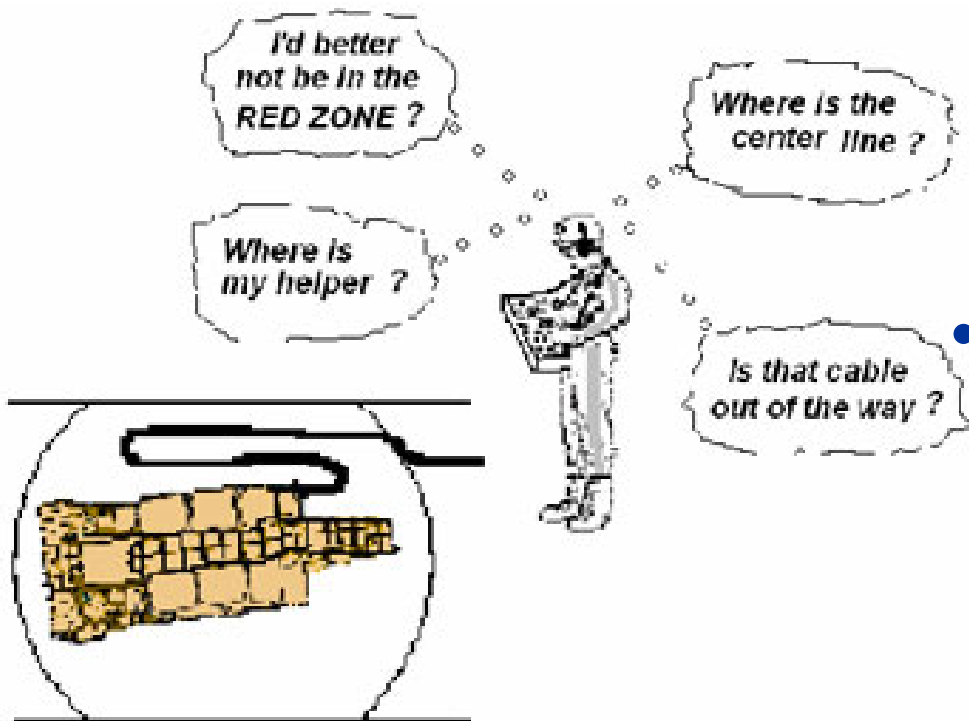


- ALWAYS expect the remote control to move the crawlers (CATS) in the same direction regardless of the direction you are facing.
- DO NOT become disoriented because your position changes. The operation of the remote control does not change if you are at the rear, facing forward or in the front, backing out.

Remote Control Best Practices

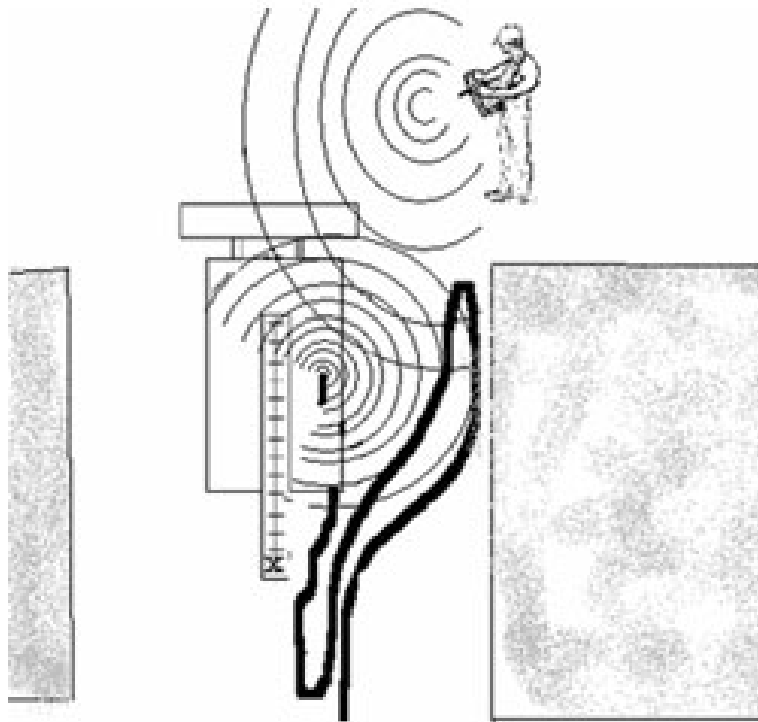
Keep Your Mind On Your Work

- Communicate with co-workers and maintain clear visibility with all personnel in the vicinity of moving equipment.
- De-energize the machine and remote control unit according to established safe work practices before entering the **"RED ZONE"**.



Remote Control Best Practices

When Radio Signal is Lost Don't Approach Remote Control Continuous Miners




- If the remote control continuous miner is not following the commands of the radio remote control, DO NOT get within the machine's turning radius to get closer to the machine's antenna.
- Assume the machine or remote control unit has malfunctioned and proceed according to established company policies for maintenance and trouble shooting of the radio remote control equipment.

Remote Control Best Practices

- Follow the established Standard Operating Procedure while tramming the remote controlled continuous miner.
- When moving continuous mining machines around corners, or in other instances where the left and right traction drives are operated independently, low tram speed should be used.
- Ensure that continuous mining machine operators lower the conveyor boom and ripper head, as far as possible, prior to moving the machine.

Remote Control Best Practices

- 
- All personnel should verify their proposed route of travel is clear when tramming continuous miners into position.
 - All power circuits and electrical equipment shall be de-energized before any work is done on such circuits and equipment.
 - All areas where persons are required to work or travel should be kept free of tripping and stumbling hazards.

Safety and
Health are
Values!

Triangle of Success

Safety and
Health are
Values!



Our Ultimate Measure of Success



*Daddy's Home ©
By Wayne Collett*

Every Day Every Shift

Data Sources

Data presented in this presentation was gathered from:

- The MSHA fatal accident reports
<http://www.msha.gov/fatals/fab.htm>
- Remote control fatal accident analysis report of victim's physical location with respect to the mining machine
[http://www.msha.gov/webcasts/Coal2005/Fatal Accident Summary.pdf](http://www.msha.gov/webcasts/Coal2005/Fatal%20Accident%20Summary.pdf)
- The 7000-1 accident forms submitted by operators

What do you need from MSHA?



Share your recommendations and ideas
with the rest of the mining industry...

E-mail MSHA at:

Thomas.Charles@dol.gov

or

chirdon.david@dol.gov